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THE ADDITION OF A NEW SKIPPER, *ADOPAEA*  
*LINEOLA* (OCHS.), TO THE LIST OF U. S.  
LEPIDOPTERA

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Since 1910 an introduced species of European skipper, *Adopaea lineola* (Ochs.), has been reported in the province of Ontario, Canada, but there has been no recorded instance as yet of its appearance within the borders of the United States.

In 1927 and each year following, the writer has been taking specimens of a bright golden brown skipper near Detroit, Michigan, which were not identified until quite recently. With the assistance of Professor W. T. M. Forbes, of the New York State College, and Mr. Sherman Moore, of Detroit, these specimens have been identified as *Adopaea lineola* (Ochs.), thus establishing what appears to be the first record of the occurrence and colonization of this insect within the territory of the United States.

It is interesting to note that the distance from London, Ontario (where *Adopaea lineola* was first reported), to the locality in Michigan where it is now found is approximately 120 miles. If we were to judge the migration of this skipper in mathematical terms, its arrival in the neighborhood of Detroit would represent an advance of about seven miles a year. So far, *lineola* appears to be confined, in the United States, to the southwestern

shore of Lake St. Clair. No local collectors have reported taking *lineola* west of Wayne County, Michigan. How far north or south of this locality it may occur has yet to be determined. In 1927 the writer took one specimen (♀) at Findlay, Ohio. It is therefore possible that colonies have established themselves in Ohio as well as in Michigan. It is requested that lepidopterists be on the lookout for this skipper, particularly those who reside or expect to collect in the States bordering Lakes Huron, St. Clair and Erie. If any one should find *lineola*, will they please report its occurrence, together with the date and locality, to Mr. Ernest L. Bell, 438 Amity Street, Flushing, L. I., New York. Here we have an opportunity to trace the spread of a new species of butterfly and to study the various factors which may influence its distribution. If any collector is doubtful as to the identity of specimens, Mr. Bell or the writer will be only too glad to offer assistance.

*Adopaea lineola* is a rather pretty skipper, the upper surface of the wings in both males and females being of a golden brown color. The submarginal border of both the fore and hind wings has a black band about one-half to three-quarters of a millimeter in width. From this radiates a grayish yellow marginal fringe of scales about the same width as the black submarginal band. The veins on the upper surface of both fore and hind wings are black, and black markings, extending slightly on either side of the veins, widen as they approach the outer margin of the wings. Black stigmata are found on the fore wings of the males.

The thorax and abdomen are covered with rather short reddish or golden brown hair (or scales), while the tip of the abdomen is yellowish gray. The chitin on the thorax is black, quite noticeable on rubbed specimens but practically indistinguishable in those that have freshly emerged from the pupa. The eyes are dark brown. The antennæ are dark brown, faintly annulated with golden brown rings. The tips of the antennæ are black. The under surface of the fore wings is yellowish brown and the base black or very dark brown. The black submarginal band which has been described as occurring on the upper surface is only faintly reproduced on the under surface of the wings and

is very narrow there. The color of the under surface of the hind wings is greenish or yellowish gray. The black venation, which is quite conspicuous on the upper surface of the wings, does not occur at all on the under surface of either fore or hind wings. The costal margin on both the upper and under surface of the fore wings is black. There is no pronounced difference in markings or coloration as between the sexes; in fact, it would be difficult to tell the males from the females if it were not for the stigmata. Even these are not very well defined and one has to examine specimens rather closely to determine the sex. The wing expanse in the males is 24–26 millimeters; in the females 26–30 millimeters.

Out of about two hundred specimens of *lineola* taken last year (1930) there were two males that showed a rather marked difference in coloration. These differed from typical specimens in having the upper surface of the fore wings a golden yellow instead of the usual golden brown. The upper surface of the hind wings is much darker than in typical specimens; in fact the inner half is a dark olive brown shade. The under surface of the wings of this aberrant form is similar to typical specimens, but the color is not so dark, being of a greenish olive more than a yellowish gray. These two aberrant specimens are somewhat smaller than typical males. No atypical females have been noted so far.

The writer has not very closely studied the habits of *Adopaea lineola*. The flight is not particularly strong for a skipper, and the insect is rather easy to catch. Specimens may even be caught by placing a cyanide bottle over them. The females are quicker to take flight than the males. *Lineola* is fond of red and white clover, also milkweed. Several specimens were found (dead), caught by their legs between the clefts of the glands on the pollen masses of the milkweed flowers. Mud puddles are also frequented.

The males appear about the middle of June, and females about 7–10 days later. Few specimens remain by the end of July; such as are found after this time are usually very much battered and worn. The ratio of males to females (from limited observation) appears to be about three to one.

*Adopaea lineola* has been increasing rapidly in numbers in the limited area where it is to be found in Wayne County, Michigan. Last year (1930) it was so abundant as to literally swarm from the middle of June to the first of July.

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